

---

# TEN NOVELTIES IN *XYRIS* (XYRIDACEAE) FROM THE PLANALTO OF BRAZIL

---

R. Kral<sup>1</sup> and  
Maria das Graças de Lapa Wanderley<sup>2</sup>

## ABSTRACT

Ten taxa of *Xyris* (nine species and one variety), sent to the senior author for definitive treatment during the early 1980s, are herein described, figured, and proposed for addition to the flora of Brazil. All are from the Brazilian Planalto: five (*X. diaphanobracteata*, *X. jataiana*, *X. lutescens*, *X. pranceana*, *X. sceptrifera*) are from Goiás, four (*X. seubertii* var. *espinhacae*, *X. itambensis*, *X. obcordata*, and *X. villosicarinata*) are from Minas Gerais, and one (*X. dissitifolia*) is from Paraná. These new *Xyris* are presented alphabetically and each is contrasted with related species.

---

Among the undetermined Xyridaceae from Brazil sent to the senior author for definitive treatment during the years 1980, 1981, and 1982 are ten that have long awaited publication as new taxa. They are arranged alphabetically.

**1. *Xyris diaphanobracteata* Kral & Wanderley, sp. nov.** TYPE: Brazil. Goiás: Rod. GO-12; km 5–10 ao sul de Alto Paraiso, campo arenoso, flor amarela, 24 May 1975, G. Hatschbach 36815 (holotype, MBM; isotypes, US, VDB). Figure 1.

Planta perennis, caules breves, radices graciles. Folia ensiformi-linear, 15–20 cm longa, disticha, flabellate expansa, solum basalia, vaginis scaporum longiora; laminae planae vel leviter tortae, 3–5 mm latae, compressae, flavovirentes, inconspicue multinervosae, papillosae, marginem versus crassinervae, ferrugineae; apices abrupte contracti, incurvato-acuti, incrassati; margines aciebus pallide villosociliatis; vaginae carinatae, carinibus ciliatis, lateribus valde multicostatis, glabris, flavofuscatis, basin versus castaneis, rugulosis, marginibus in laminas gradatim convergentibus, infimis gradatim expansis, tum

abrupte ad basim dilatatis, aciebus ad basim anguste scariosis, antrorse longiciliatis, pilis albidis. Vaginae scaporum basim versus ancipitae, pilosociliatae, glabrae, multicostatae, ferrugineae, nitidae, a medio ad apicem acute carinatae, carinibus rufis, ciliatis, laminis brevibus, obtusis. Scapi graciles, recti, 4.5–6 dm alti, leviter torti, anguste 2–3-costati, in sectione transversali elliptici, apicem versus ancipitii, costis longiciliatis, pilis albidis. Spicae late ovoideae, 1–1.5 cm longae, obtusae, multibracteatae, bracteis laxis, fere uniformis, spiraliter imbricatis, subscariosis, convexis, ecarinatis, late ovatis, 5–7 mm longis, rotundatis, testaceis, margine squarrosis, laceratis; area dorsalis indistincta; bracteae steriles plures. Sepala lateralia libera, valde curvata, leviter exserta, valde inaequilatera, oblanceolata, tenuia, 6–7 mm longa; ala carinalis lata, ciliato-fimbriolata. Laminae petalorum suborbiculatae vel reniformes, 7–8 mm longae, grosse erosae, flavidulae. Staminodia bibrachiata, brachiis complanatis, longipenicillatis. Antherae lanceolato-oblongae, sagittatae, ca. 2 mm longae. Capsula turgide obovoidea, ca. 3 mm longa, placenta basalis; semina numerosa, ellipsoidea, 0.5 mm longa, pallide vel profunde lampro-brunnea, prominente longitudine 12–14-costata.

Plants short-stemmed perennials with fine roots. Leaves ensiform-linear, 15–20 cm long, distichous, flabellately spreading, strictly basal, longer than the scape sheaths; blades flat to slightly twisted, 3–5 mm wide, flattened,

---

<sup>1</sup> Robert Kral, Herbarium, Department of Biology, Vanderbilt University, Box 1705, Station B, Nashville, Tennessee 27235, U.S.A.

<sup>2</sup> Sra. Dra. Maria das Graças de Lapa Wanderley, Instituto de Botânica, Caixa Postal 4005, 01000 São Paulo, SP, Brasil.



yellow-green, inconspicuously multinerved, papillose, thick-nerved toward margin, reddish brown; apices abruptly narrowed, incurved-acute, thickened; margins with edges pale villous-ciliate; sheaths ciliate-carinate, the sides strongly multicostate, smooth, yellowish-fuscous, castaneous toward the base, rugulose, with margins gradually narrowing into the blades, gradually expanding below, abruptly dilated at base, there the edges narrowly scarious, antrorsely long-ciliate with white hairs. Scape sheaths ancipital toward base, pilose-ciliate, smooth, multicostate, reddish brown, shining, acutely carinate from middle to apex, the carinae reddish, ciliate, the blades short, obtuse. Scapes slender, straight, 4.5–6 dm high, slightly twisted, narrowly 2–3-costate, elliptic in cross section, ancipital toward the apex, the costae long-ciliate with white hairs. Spikes broadly ovoid, 1–1.5 cm long, obtuse, the bracts numerous, loose, nearly uniform, spirally imbricate, subscarious, convex, ecarinate, broadly ovate, 5–7 mm long, rounded, brownish yellow, marginally squarrose, lacerate; dorsal area indistinct; sterile bracts many. Lateral sepals free, strongly curvate, slightly exserted, strongly inequilateral, broadly oblanceolate, thin, 6–7 mm long; keel wide, ciliate-fimbriolate. Petal blades suborbicular to reniform, 7–8 mm long, strongly erose, yellow. Staminodia bibrachiate, the branches flattened, long-penicillate. Anthers lanceolate-oblong, sagittate, ca. 2 mm long. Capsule turgidly obovoid, ca. 3 mm long, the placentation basal; seeds numerous, ellipsoid, 0.5 mm long, palely or deeply lustrous brown, prominently longitudinally 12–14-costate.

This novelty most resembles *X. pterygoblephara* Steudel, particularly by having long, pale ciliation on scape and leaf edges; distichous, flabellately spreading, flattened leaves; and concolorous bracts. *Xyris diaphanobracteata* differs conspicuously in its broader spikes and uniform bracts (sterile ones more numerous) with thin, translucent texture and squarrose edges. The lateral sepals are broader, more strongly curvate, blunter, exserted,

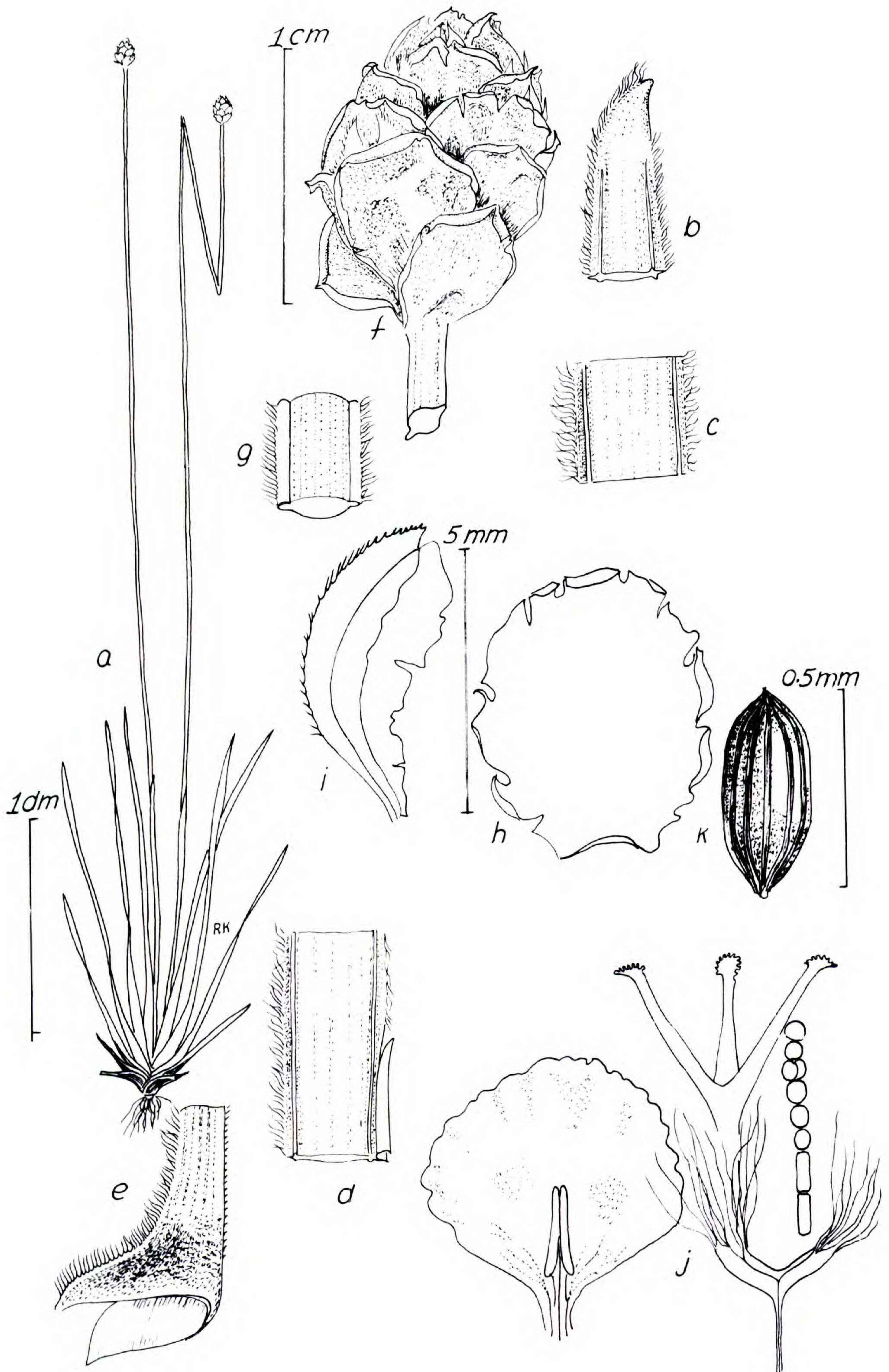
very inequilateral (rather than equilateral), and more prominently ciliate.

**2. *Xyris dissitifolia* Kral & Wanderley, sp. nov.** TYPE: Brazil. Paraná: Mun. Campiná Gde. do Sul, campo umido encosta de morro, flor amarella, alt. 1,500–1,700 m s/mar, 15 Jan. 1969, *Hatschbach & Ckoczicki 20752* (holotype, MBM; isotypes, US, VDB). Figure 2.

Planta perennis, caespitosa, radicibus gracilibus. Caules breves vel elongati, per bases laxas foliorum obtecti. Folia laxa, anguste linearia, 2–5 dm longa, disticha, erecta vel leviter flabellate expansa, vaginis scaporum longiora; laminae vaginis 2–5-plo longiores, subteretes vel angulosae aut leviter compressae, tortae, valde mediane sulcatae et paucicostatae, olivaceae, a medio ad apicem glabrae, basin versus ruguloso-papillosae, subteretes; apices gradatim contracti, ad apicem anguste obtusi, erecti, persaepe incrassati et triangulati; vaginae laxae, latae, ecarinatae vel carinatae, pallide lamprobrunneolae, a basi ad apicem gradatim contractae, apicem versus ligulam oblongam obtusam scariousam 3–4 mm longam fascientes, marginibus latis integris nitidis, dorsis rotundato-plicatis, valde unicostatis, praeter basin papillosis aut rugulosis. Vaginae scaporum laxae, basin versus conduplicatae tubulosae multicostae, nitidae, tortae, apicem versus apertae, laminis similibus laminis foliorum sed brevioribus. Scapi graciles, 3–6 dm alti, subteretes aut (in sectione transversali) elliptici, ca. 1 mm crassi, olivacei, apicem versus 1–2-costati et subtiliter striatae, costis glabris, basin versus persaepe obtuse triangulati aut sulcati. Spicae cylindro-oblongae vel late ellipsoideae aut obovoideae, pauciflorae, ca. 1 cm longae; bracteae laxe spiraliter imbricatae, convexae, pallide ferrugineae, papillosae, rotundatae, marbinibus integris, tum erosis, ad apicem persaepe villosociliatis, trichomatibus sordidis; bracteae steriles 4–6, obovatae, ca. 4–7 mm longae, inferiores breviores, prominente unicostatae; bracteae fertiles paucae, oblongae vel obovatae, usque ad 9 mm longae, carinatae, eis intimis navicularibus; area dorsalis inconspicua, brevis, anguste elliptica, pallide brunneola. Laminae petalorum late ovatae, ca. 1 cm longae, subacutae, leviter erosae, luteolae. Staminodia bibrachiata, brachiis oblongis complanatis, ad apicem longipenicillatis. Antherae late lanceolatae, ca. 2 mm longae, sagittatae; filamenta plana, ca. 3 mm longa. Capsula oblonga vel obovoidea, ca. 5 mm longa, apiculata, placenta basali. Semina matura non visa sed immatura lineari-fusiformia, 1.5 mm longa, bicaudata, brunneola, longitudine minute striata.

Plants perennial, caespitose, slender-rooted. Stems short or elongated, covered by the lax bases of leaves. Leaves loose, narrowly linear, 2–5 dm long, distichous, erect or slightly flabellately spreading, longer than the scape sheaths; blades 2–5 times longer than the sheaths, subterete to angulate or slightly com-







pressed, twisted, medially strongly sulcate and few-ribbed, olivaceous, smooth from middle to apex, rugulose-papillose and subterete toward base; apices gradually contracted, narrowly obtuse at tip, erect, usually thickened and triangulate; sheaths lax, wide, ecarinate or carinate, pale lustrous brown, gradually narrowing from base to tip, producing near the apex a scarious, oblong, obtuse ligule 3–4 mm long, the margins broad, entire, shining, the backs rounded-plicate, strongly unicosate, papillose or rugulose except for the base. Scape sheaths lax, conduplicate toward base, tubular, multicostate, shining, twisted, open toward apex, with blades similar to leaf blades but shorter. Scapes slender, 3–6 dm high, subterete, or elliptic in cross section, ca. 1 mm thick, olivaceous, toward apex 1–2-costate and finely striate, the costae smooth, toward base often obtusely triangulate or sulcate. Spikes oblong-cylindric or broadly ellipsoid to obovoid, few-flowered, ca. 1 cm long; bracts loosely spirally imbricate, convex, pale reddish brown, papillose, rounded, with margins entire, then erose, at apexes often villous-ciliate with sordid trichomes; sterile bracts 4–6, obovate, ca. 4–7 mm long, the lowest shortest, prominently unicosate; fertile bracts few, oblong to obovate, up to 9 mm long, the inner ones navicular, carinate; dorsal area inconspicuous, short, narrowly elliptic, pale brown. Petal blades broadly ovate, ca. 1 cm long, subacute, slightly erose, yellow. Stamnodes bibrachiate, the branches oblong, flat, long-penicillate at apex. Anthers broadly lanceolate, ca. 2 mm long, sagittate; filaments flat, ca. 3 mm long. Capsule oblong to obovoid, ca. 5 mm long, apiculate, the placenta basal. Immature seeds linear-fusiform, 1.5 mm long, brownish, minutely longitudinally striate. Mature seeds not seen.

*Additional specimens examined.* BRAZIL. PARANÁ: Serra Ibitiraquire, Abrigo 1 (Mun. Campiná Gde. do Sul), campo umido encosta de morro, alt. 1,700 m, 23 Jan.

1970, *Hatschbach 23404* (MBM, US, VDB); Serra Capivari Grande (mun. Campiná Gde. do Sul), encostas gramíneas umidas de morro, alt. 1,500 m, 8 Feb. 1971, *Hatschbach 26322* (MBM, US, VDB).

This species, with its slender, long leaf blades, loose and distichous leaf sheaths along definite stems, papillose-backed bracts with small, pale brown dorsal areas, and villous sepal tips, shows some characters of *Xyris filifolia* Nilsson but has more stem, hairier sepal keels, and less evident dorsal areas. On the other hand, the vestite sepals liken it to *X. rigida* Kunth, or *X. regnellii* Nilsson, but leaf characters do not agree, nor do characters of fertile bract or scape.

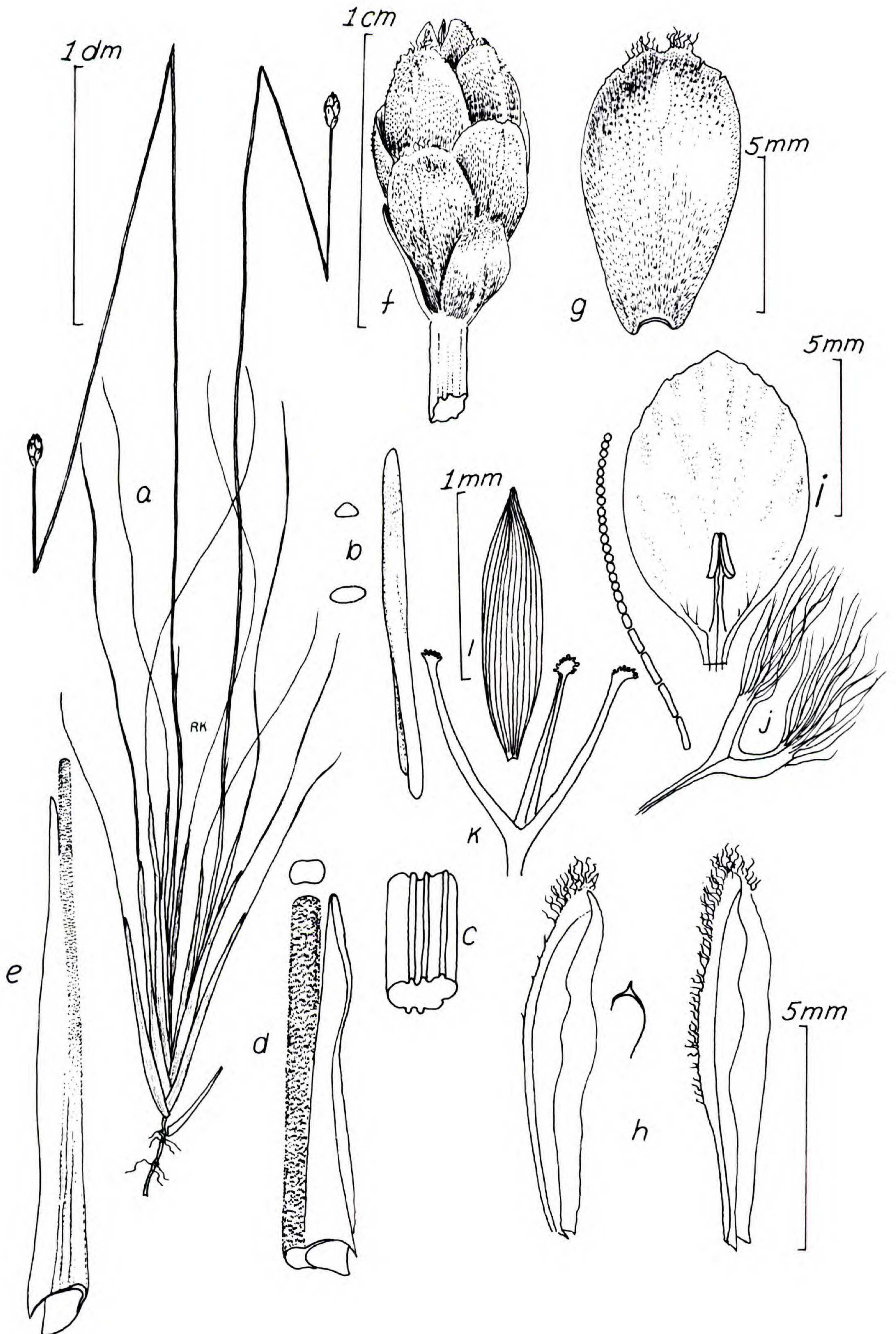
**3. *Xyris itambensis* Kral & Wanderley, sp. nov.** TYPE: Brazil. Minas Gerais: Serra do Ispinhaco, sandy soil, eastern slopes of Pico do Itambe; elev. ca. 1,550 m; sandstone outcrops with shrubby vegetation, adjacent grassy slopes, and valley of small stream; mostly sandy soil but with overlying black humus in many places, 12 Feb. 1972, *W. R. Anderson, M. Stieber, J. H. Kirkbride, Jr. 35879* (holotype, UB; isotypes, NY, US). Figure 4.

Planta perennis, densicaespitosa, glabra; caules breves; radices graciles. Folia erecta vel leviter expansa, 1.5–3 dm longa, solum basalia, vaginis scaporum longiora, torta et flexuosa, lucida; laminae vaginis 3–6-plo longiores, teretes vel subteretes, filiformes, 0.5–0.6 mm crassae, virides, longitudine subtiliter striatae, basin versus minute rugulosae; apices gradatim contracti, anguste conici; vaginae ecarinatae, ad basim abrupte dilatatae, lamproferugineae, fimbriociliatae, prominente longitudine costatae, superne gradatim contractae, lamprospadiceae, marginibus latis, tenuibus sed firmis, integris vel parce villosifimbriatis, in medio longitudine multicostatae, ad apicem ligulam erectam oblongam acutam 4–6 mm longam fascientes. Vaginae scaporum ad basim teretes, laxae conduplicateae, multicostatae, tortae et leviter flexuosae, purpureae vel pallide ferrugineae, apicem versus apertae, marginibus latis integris purpureis et ad apicem cuspidatis. Scapi gracillimi, 3.5–5.5 dm alti, torti et flexuosi, olivacei, subteretes, laeves, ecostati vel unicosati, costibus glabris. Spicae late ellipsoideae vel anguste obovoideae, 6–8 mm longae, 4–5 mm crassae, pauciflorae, pluribracteatae,

←

FIGURE 1. *Xyris diaphanobracteata* (Hatschbach 36815).—a. Habit sketch.—b. Leaf tip.—c. Sector of mid blade.—d. Sector at leaf sheath–blade junction.—e. Leaf base.—f. Spike.—g. Sector of scape ca. 2 cm below apex.—h. Fertile bract.—i. Lateral sepal.—j. Petal and stamen, stylar apex, staminode, enlarged beard hair.—k. Seed.







bracteis sterilibus pluribus, convexis, inferioribus suborbicularibus vel late ovatis, 2–3.5 mm longis, superioribus navicularibus usque ad 5 mm longis; bracteae fertiles late oblongae vel obovatae, ad 5–6 mm longae, marginibus tenuibus, laceratis, ad apicem parce rufovillosulis, intimis valde plicatis; area dorsalis elliptica, ca. 2 mm longa. Sepala lateralia libera, curvata, oblonga, ca. 5–6 mm longa, acuta, leviter inaequilatera, ala carinali angusta, a medio ad apicem rufofimbriolata. Laminae petalorum oblongae, 6–6.5 mm longae, late acutae, sed integrae, luteolae. Antherae lanceolato-oblongae, 1.5 mm longae, emarginatae et sagittatae, filamentis longiores. Staminodia bibrachiata, brachiis subteretibus, longipenicillatis. Placenta centralis. Semina matura non visa sed immatura cylindrico-fusiformia, 1.2 mm longa.

Plants perennial, densely caespitose, smooth; stems short; roots slender. Leaves erect to slightly spreading 1.5–3 dm long, strictly basal, longer than the scape sheaths, twisted and flexuous, lustrous; blades 3–6 times longer than sheaths, terete or subterete, filiform, 0.5–0.6 mm thick, green, longitudinally finely striate, minutely rugulose toward base; tips gradually narrowing, narrowly conic; sheaths ecarinate, abruptly dilated at base, shining red-brown, fimbriate-ciliate, prominently longitudinally costate, gradually narrowing above, lustrous brown, with margins broad, thin but firm, entire to sparsely villous-fimbriate, at middle longitudinally multicostate, at apex producing an erect, oblong, acute ligule 4–6 mm long. Scape sheaths terete at base, laxly conduplicate, multicostate, twisted and somewhat flexuous, purplish or pale red-brown, open toward apex, with margins broad, entire, purplish, and at apex cuspidate. Scapes very slender, 3.5–5.5 dm high, twisted and flexuous, olivaceous, subterete, smooth, ecostate to unicostate, with costae smooth. Spikes broadly ellipsoid to narrowly obovoid, 6–8 mm long, 4–5 mm thick, few-flowered, several-bracted, the sterile bracts several, convex, the lower ones suborbicular to broadly ovate, 2–3.5 mm long, the upper sterile bracts navicular, up to 5 mm long; fertile bracts broadly oblong to obovate, to 5–6 mm long, with thin, lacerate margins, sparsely red-villosulous at apex, the inner ones strongly pli-

cate; dorsal area elliptic, ca. 2 mm long. Lateral sepals free, curvate, oblong, ca. 5–6 mm long, acute, slightly inequilateral, the keel narrow, red-fimbriolate from middle to tip. Petal blades oblong, 6–6.5 mm long, broadly acute, entire, yellow. Anthers lanceolate-oblong, 1.5 mm long, emarginate and sagittate, longer than the filaments. Staminodia bibrachiata, the branches subterete, long-penicillate. Placenta central. Immature seeds cylindrical-fusiform, 1.2 mm long. Mature seeds not seen.

In habit the new species resembles *X. filifolia* Nilsson, a slender species which also has small but prominent dorsal areas and strongly ligulate leaves with very slender and terete blades. The scapes, unlike those of *X. filifolia*, are terete, the tips of the fertile bracts are villosulous with red hairs, and the lateral sepal keels are densely villosulous above the middle. *Xyris itambensis* relates also to the complex involving *X. rigida* Kunth, but is more slender, has fewer flowers, and has subequilateral (rather than strongly inequilateral) sepals.

**4. *Xyris jataiana* Kral & Wanderley, sp. nov.** TYPE: Brazil. Goiás: Mun. Jatai Rod. Jatai–Caiapenia, km 50 (mun. Jatai), Goiás; flor amarela, do brejo, 24 July 1977, *G. Hatschbach 40060* (holotype, MBM; isotypes, US, VDB). Figure 5.

Planta perennis, glabra, densicaespitosa; radices graciles, fibrosae; rhizomata ascendentia, per bases persistentes veteranas foliorum obiecta. Caules elongati vel breves. Folia rhizomatum et caulium subdisticha, rigida, torta et flexuosa, 2–4 dm longa, vaginis scaporum longiora; laminae vaginis 5–8-plo longiores, tortae, anguste lineares, 0.8–1.5 mm latae, compressae, flavovirentes, longitudine 4–5-nervosae, inferne sulcatae; apices leviter contracti, asymmetricè anguste rotundati callosi; margines filo metalico similes, luteoli vel brunneoli, persaepe nitidi, quam in centro laminae crassiores; vaginae ecarinatae, anguste plicatae, atrocastaneae, nitidae, marginibus tenuibus, integris, gradatim convergentibus, ad apicem ligulam erectam acutam plene 10 mm longam fascientes, et hic quam laminis distincte latiores, infime gradatim dilatatae. Vaginae scaporum laxae, plerumque apertae, tortae, basin

←  
FIGURE 2. *Xyris dissitifolia* (Hatschbach & Ckocziński 20752).—a. Habit sketch.—b. Leaf apex.—c. Sector of leaf at mid blade.—d. Leaf blade–sheath junction.—e. Leaf base.—f. Spike.—g. Fertile bract.—h. Two lateral sepals.—i. Petal blade, stamen.—j. Staminode and enlarged beard hair.—k. Stylar apex.—l. Seed.



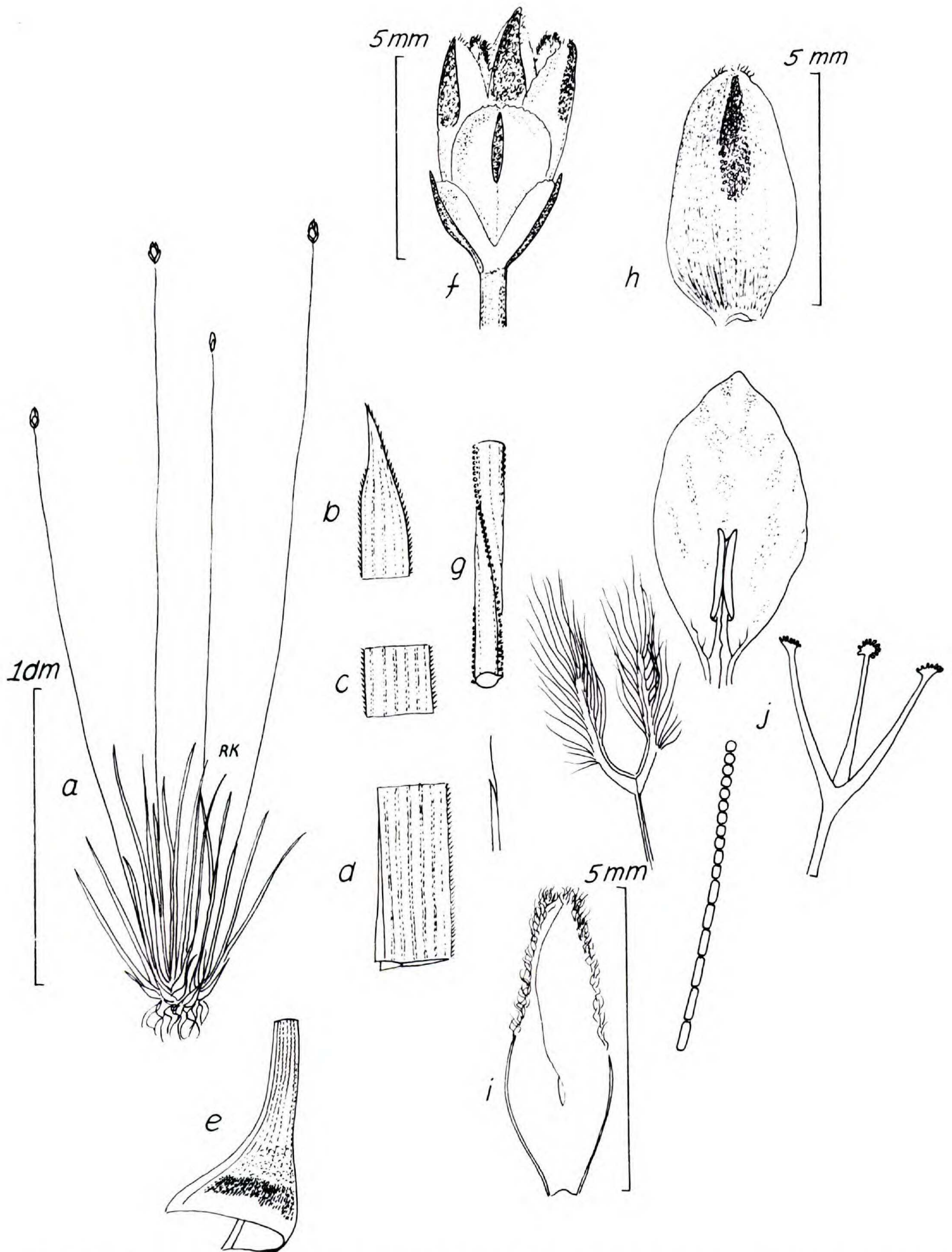


FIGURE 3. *Xyris seubertii* var. *espinhacae* (Irwin et al. 32667).—a. Habit sketch.—b. Leaf apex.—c. Sector of mid blade.—d. Sheath-blade junction.—e. Leaf base.—f. Spike.—g. Sector of scape.—h. Fertile bract.—i. Lateral sepals.—j. Petal and stamen, staminode with enlarged view of beard hair, stylar apex.



versus paucicostatae, castaneae, apicem versus carinatae, laminis brevibus erectis compressis vel triangulatis, obtusis. Scapi erecti, leviter torti, teretes, 5–6 dm alti, inferne fusci, compressi, apicem versus teretes, ecostati, luteovirides. Spicae multiflorae, multibracteatae, anguste obovoideae, 1–1.5 cm longae, attenuatae; bracteis convexis, ecarinatis, ferrugineofuscis, spiraliter imbricatis, rotundatis, integris vel minute erosis; bracteae steriles plures, anguste obovatae, 2–4 mm longae, fertilibus breviores et in eas gradatim transientes; bracteae fertiles late obovatae, ca. 4.5–5 mm longae, apice rotundatae; area dorsalis distincta, ovata vel elliptica, ca. 1.5–2 mm longa, olivacea vel atroferruginea. Sepala lateralia libera, leviter inaequilatera, anguste oblanceolata, ca. 5 mm longa, acuta; ala carinalis ciliata, basin versus angusta, apicem versus lata, firma. Laminae petalorum late ellipticae, 5–5.5 mm longae, luteolae, apice anguste rotundatae, erosae. Staminiodia bibrachiata, brachiis longipenicillatis. Antherae oblongae, ca. 2 mm longae. Capsula matura non visa.

Plants perennial, glabrous, densely caespitose from slender roots. Rhizomes ascending, their bases covered by persistent old leaves. Stems short or elongated. Leaves of rhizomes and stems subdistichous, rigid, twisted and flexuous, 2–4 dm long, longer than the sheaths of the scapes; blades 5–8 times longer than sheaths, twisted, narrowly linear, 0.8–1.5 mm wide, flattened, yellowish green, longitudinally 4–5-nerved, sulcate below; apices somewhat contracted, asymmetrically narrowly rounded, callused; margins wirelike, yellowish to brown, often shining, thicker than the central part of the blade; sheaths ecarinate, narrowly folded, deeply castaneous, lustrous, with thin, entire margins, these gradually converging, at the apex forming an erect, acute ligule 10 mm long, this distinctly wider than the blade, gradually dilating below. Sheaths of scapes lax, largely open, twisted, few-ribbed toward the base, castaneous, carinate toward the apex, with blades short, erect, compressed or triangulate, obtuse. Scapes erect, slightly twisted, 5–6 dm long, brown below, compressed, terete toward the apex, ecostate, yellow-green. Spikes many-flowered, many-bracteate, narrowly obovoid, 1–1.5 cm long, attenuate; bracts convex, ecarinate, reddish brown, spirally imbricate, rounded, entire to minutely erose; sterile bracts several, narrowly obovate, 2–4 mm long, shorter than the fertile bracts and grading into them; fertile bracts broadly obovate, ca. 4.5–5 mm long, apically rounded; dorsal area distinct, ovate

to elliptic, ca. 1.5–2 mm long, olivaceous to dark reddish brown. Lateral sepals free, slightly inequilateral, narrowly oblanceolate, ca. 5 mm long, acute; carinal keel ciliate, toward the base narrow, toward the apex wide, firm. Petal blades broadly elliptic, 5–5.5 mm long, yellow, narrowly rounded, erose. Staminiodia bibrachiata, the branches long-hairy. Anthers oblong, ca. 2 mm long. Mature capsule not seen; placentation basal. Seeds not seen.

This species, with its distinct, elongate ligule broader than the leaf blade base, multi-flowered spikes with (often) reddish brown dorsal areas, and free lateral sepals with ciliate keels, shows affinities to the rare *X. downsiana* Smith, a species thus far known only from Pará. However, *X. jataiana* has a longer ligule; its leaf blade margins are more broadly incrassate; the leaf apices are bluntly callus tipped; the flowers are larger; and the lateral sepals are more nearly equal. Mature fruit and seeds of either of these species are unavailable.

**5. *Xyris lutescens* Kral & Wanderley, sp. nov.** TYPE: Brazil. Goiás: Mun. Posse, Nova Vista, brejo da borda de chapada, 8 Oct. 1976, G. Hatschbach 39021 (holotype, MBM; isotypes, US, VDB). Figure 6.

Planta perennis, solitaria vel caespitosa, basibus bulbosis, atrocastaneis. Radices graciles. Caules breves. Folia ensiformi-linearia, 10–20 cm longa, torta, erecta vel leviter expansa, vaginis scaporum longiora; laminae planae vel leviter tortae, 3–4-plo vaginis longiores, 1.2–2.2 mm latae, valde compressae, flavovirentes, punctatae, inconspicue longitudine multinervosae; apices abrupte contracti, incurvato-acuti, incrassati; margines angusti, leviter incrassati, nitidi, luteoli; vaginae ecarinatae vel asymmetricice carinatae, multicostatae, lateribus stramineis, transversim rugulosis, marginibus pallide longiciliatis, in laminas gradatim convergentibus, infime gradatim expansae tum abrupte ad basim dilatatae, acies scariosae. Vaginae scaporum laxae, luteo-carinatae, tortae, acute 2–multi-costatae, laminis laminis foliorum similibus sed brevibus. Scapi graciles, flexuosi, torti, subteretes, glandacei, 4–6 dm alti, valde 2–pluricostati et angulosi, apicem versus ca. 1 mm crassi, costis papillosis vel tuberculatis aut glabris, intervala punctata. Spica multiflora, cylindro-ovoidea vel anguste ellipsoidea, 1–2 cm longa, 5–8 mm crassa, attenuata, bracteis spiraliter imbricatis, tenuibus, pallide luteobrunneolis, ecarinatis, marginibus tenuissimis



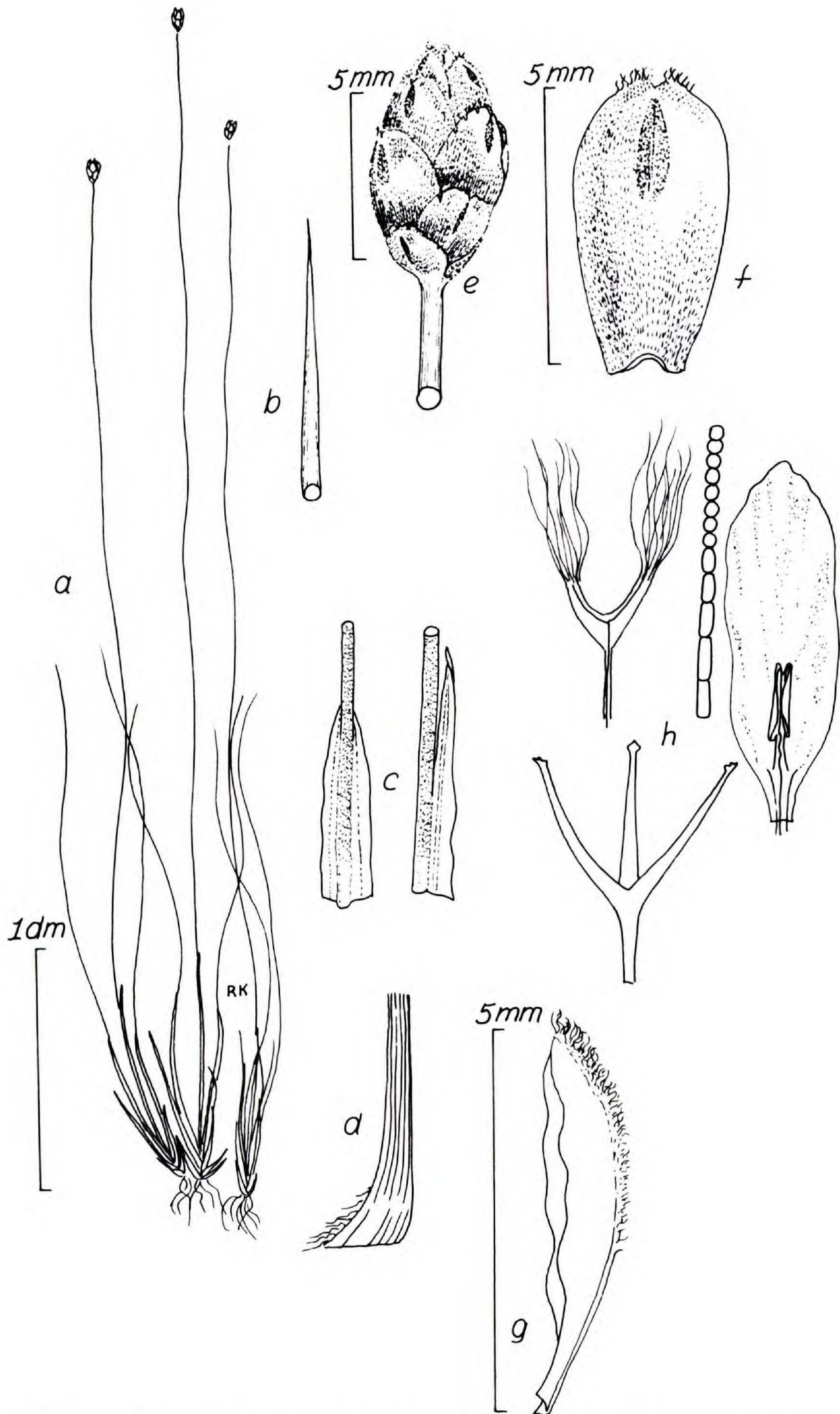


FIGURE 4. *Xyris itambensis* (Anderson et al. 35879).—a. Habit sketch.—b. Leaf apex.—c. Dorsal (left) and side (right) views of leaf-sheath junction.—d. Leaf base.—e. Spike.—f. Fertile bract.—g. Lateral sepal.—h. Petal blade and stamen, staminode, enlarged version of beard hair, stylar apex.



et profunde laceratis; bracteae steriles ovatae vel suborbiculatae, 2.5–3.5 mm longae, fertilibus breviores et in eas gradatim transientes; bracteae fertiles late obovatae vel suborbiculatae, usque 5 mm longae; area dorsalis indistincta. Sepala lateralia libera, valde inaequilatera, oblanceolata, ca. 5 mm longa, acuta, tenuissima; ala carinalis lata, supra medium irregulariter ciliatolacerata. Laminae petalorum late obovatae, ca. 5 mm longae, late rotundatae, leviter erosae, luteolae. Staminodia bibrachiatis, brachiis longipenicillatis, erectis, pilis clavatis. Antherae late oblongae, ca. 1 mm longae, retusae et sagittatae, filamentis ca. 2-plo breviores. Capsula ellipsoidea, leviter compressa, ca. 2.5 mm longa, acuta; placenta basalis. Semina cylindrico-ellipsoidea, 0.8–0.9 mm longa, translucida, pallide ferruginea, longitudinaliter et prominente 16–18-costata.

Plants perennial, solitary, with bulbous, deep chestnut bases. Roots slender. Stems contracted. Leaves ensiform-linear, 10–20 cm long, twisted, erect to slightly spreading, longer than the scape sheaths; blades flat or slightly twisted, 3–4 times longer than the sheaths, 1.2–2.2 mm wide, strongly flattened, yellow-green, punctate, inconspicuously longitudinally multinerved; apices rather abruptly contracted, incurved-acute, thickened; margins narrow, slightly incrassate, shining, yellowish; sheaths ecarinate or asymmetrically carinate, multicostate, with sides stramineous, transversely rugulose, the margins long-ciliate with pale hairs, narrowing gradually into the blades, gradually spreading below, then abruptly dilating at the base, the edges scarious. Sheaths of scapes loose, yellowish-carinate, twisted, sharply 2-many-ribbed; blades similar to blades of leaves but short. Scapes slender, flexuous, twisted, subterete, yellow with tints of brown, 4–6 dm high, strongly 2-many-costate and angulate, ca. 1 mm thick toward the apex, the costae papillose to tuberculate or glabrous, the intervals punctate. Spikes many-flowered, cylindro-ovoid to narrowly ellipsoid, 1–2 cm long, 5–8 mm thick, attenuate, the bracts spirally imbricate, thin, pale yellow-brown, ecarinate, the margins very thin and deeply lacerate; sterile bracts ovate to suborbicular, 2.5–3.5 mm long, shorter than the fertile bracts and grading into them; fertile bracts broadly obovate to suborbicular, to 5 mm long; dorsal areas indistinct. Lateral sepals free, strongly inequilateral, oblanceolate, ca. 5 mm long, acute, very thin; keel wide, ir-

regularly ciliate-lacerate from the middle to the apex. Blades of petals broadly obovate, ca. 5 mm long, broadly rounded, slightly erose, yellowish. Staminodia bibrachiate, the branches pubescent with long, clavate trichomes. Anthers broadly oblong, ca. 1 mm long, emarginate or sagittate, half as long as the filaments. Capsule ellipsoid, slightly compressed, ca. 2.5 mm long, acute; placentation basal. Seeds cylindro-ellipsoid, 0.8–0.9 mm long, translucent, pale red-brown, longitudinally and strongly 16–18-ribbed.

This species, with sheath edges gradually converging to blade bases, and lacking dorsal areas on its thin, pale-margined, broad, ragged bracts, appears to blend characteristics of the species complex around *X. ciliata* Thunb. The yellow tints of both spike and complanate foliage are distinctive, together with the strongly and sharply multicostate scape. In most xyrids the anthers are longer than the free portions of the filaments, or at least these are equal; in *X. lutescens* the anthers are considerably shorter than the filaments.

**6. *Xyris obcordata* Kral & Wanderley, sp. nov.** TYPE: Brazil. Minas Gerais: Serra do Espinhaço, wet sand among outcrops, cut-over gallery forest and adjacent outcrops, Rio Jequití, ca. 25 km E of Diamantina, elev. 790 m, 17 Mar. 1970, *H. S. Irwin, S. F. da Fonseca, R. Souza, R. Reis dos Santos & J. Ramos 27763* (holotype, UB; isotypes, NY, US). Figure 7.

Planta perennis, densicaespitosa, basibus infirmis. Caules breves. Radices graciles. Folia laxa, 1–2 dm longa, indistincte disticha, glabra, vaginis scaporum longiora; laminae planae, valde compressae, vaginis 1–2-plo longiores, 2–3.5 mm latae, longitudine indistincte multinervosae, virides; apices abrupte contracti, anguste acuti, leviter incrassati, incurvati; margines tenues, uniforme subtiliter albociliati; vaginae carinatae (carinibus integris), stramineae, marginibus scariosis, integris, in laminas gradatim convergentibus, basin versus gradatim dilatatae. Vaginae scaporum laxae, tortae, humile costatae, ad folia in coloribus, laminis apiceque similes. Scapi graciles, 2.5–4 dm alti, ca. 1 mm lati, virides, in sectio transversali elliptici vel anguste elliptici, longitudine subtiliter acute striato-nervosae, a medio ad apicem valde bicostati et vulgo ancipiti, costis compressis, latis, subtiliter antrorse albo-



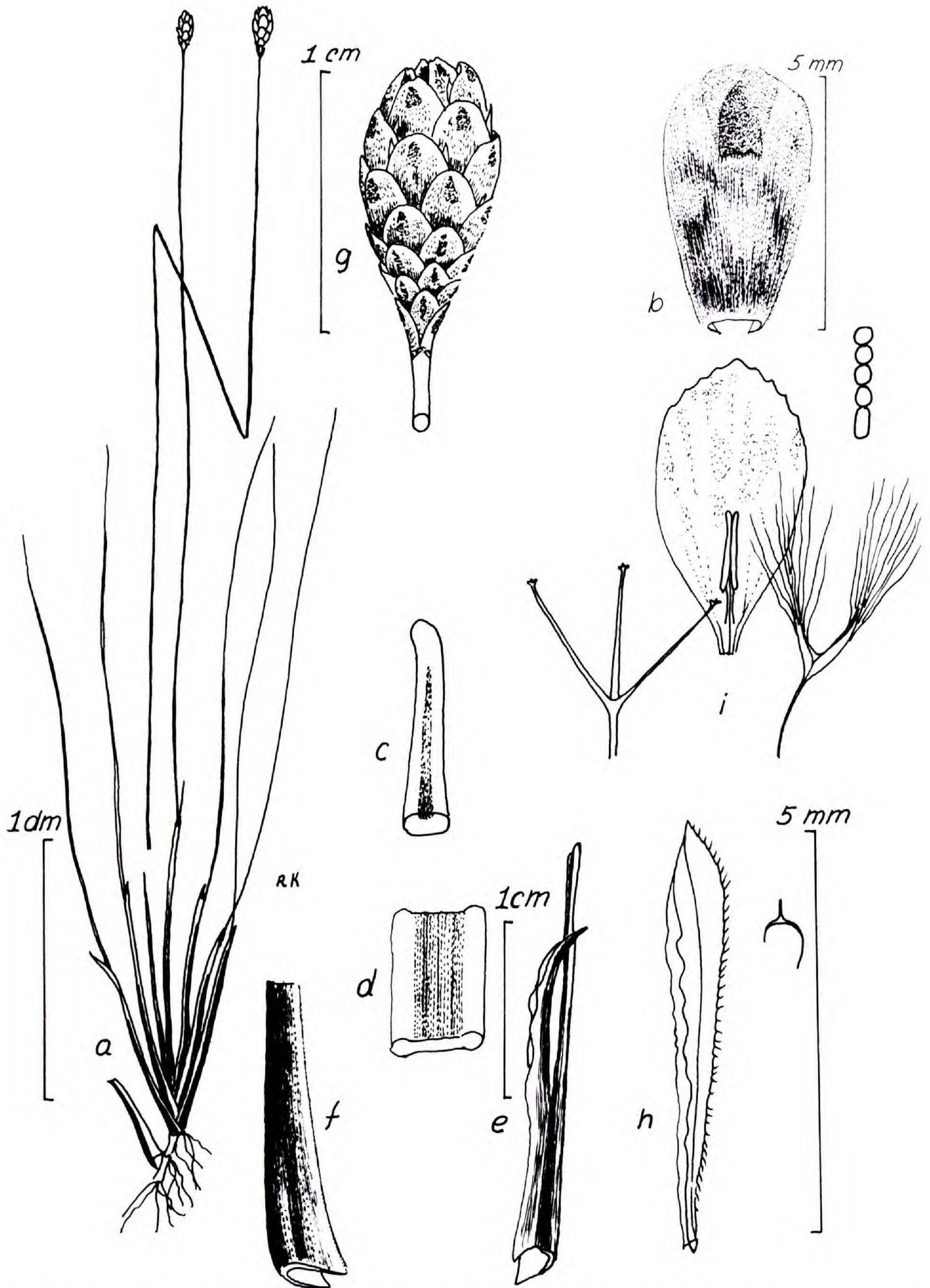


FIGURE 5. *Xyris jataiana* (Hatschbach 40060).—*a*. Habit sketch.—*b*. Bract.—*c*. Leaf apex.—*d*. Sector of leaf at mid blade.—*e*. Upper part of leaf sheath at blade base.—*f*. Leaf base.—*g*. Spike.—*h*. Lateral sepal.—*i*. Petal blade, staminode, enlarged cells of staminode beard, stylar apex.

ciliatis. Spicae multiflorae, late ovoideae, 7–9 mm longae, laxae, si prementes nunc compressae, 6–7 mm latae; bracteae ecarinatae, ovatae vel late obovatae aut suborbiculatae, obcordatae, laxe spiraliter imbricatae, tenues, pallide fulvae, marginibus amplis tenuissimis, friabilibus,

ad apicem ferrugineis; bracteae steriles 5–6, 2–2.5 mm longae; bracteae fertiles usque ad 4.5 mm longae; area dorsalis late vel anguste elliptica, ca.  $\frac{2}{3}$  bracteis breviori, viridis. Sepala lateralia libera, spathulata, acuta, ca. 4 mm longa, tenuia, ala carinali tenuissima, subintegra.



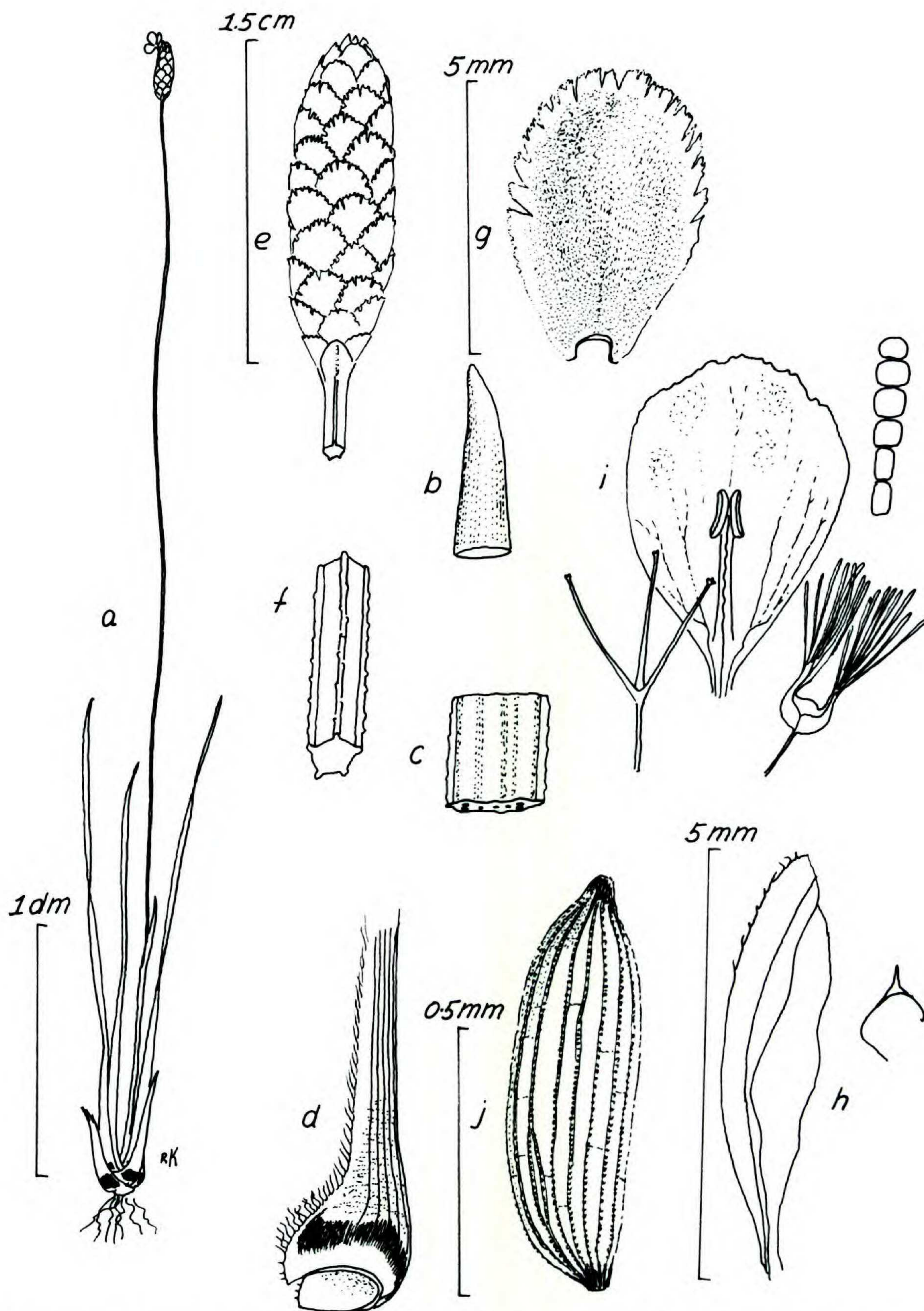


FIGURE 6. *Xyris lutescens* (Hatschbach 39021).—a. Habit sketch.—b. Leaf tip.—c. Sector of mid blade.—d. Leaf sheath.—e. Spike.—f. Sector of mid scape.—g. Fertile bract.—h. Lateral sepal.—i. Floral parts.—j. Seed.

Laminae petalorum obovatae, ca. 3 mm longae, rotundatae, luteolae. Staminodia bibrachiata, brachiis compressis, longipenicillatis. Antherae oblongo-lanceolatae, ca. 1.5 mm longae, valde emarginatae et sagittatae, filamentis longiores. Capsula obovoidea, ca. 2 mm longa, placenta centralis. Semina numerosa, turgida et late asymmetrica

ovoidea, ca. 0.3 mm longa, atroferruginea, nitida, prominente longitudinaliter 14-16-costata.

Plants perennial, densely cespitose, the bases soft. Stems short. Roots slender. Leaves



lax, 1–2 dm long, indistinctly distichous, smooth, longer than the scape sheaths; blades flat, strongly compressed, 1–2 times longer than the sheaths, 2–3.5 mm wide, longitudinally indistinctly multinerved, green; apices abruptly narrowed, narrowly acute, slightly thickened, incurved; margins thin, uniformly finely white ciliate; sheaths carinate (carinae entire), stramineous, the margins scarious and entire, narrowing gradually into the blades, gradually dilating toward base. Scape sheaths lax, twisted, low-costate, like leaves in color and with similar tips. Scapes slender, 2.5–4 dm high, ca. 1 mm broad, greenish, in cross section elliptic or narrowly elliptic, longitudinally finely and sharply striate-nerved, from middle to apex strongly bicostate and commonly ancipital, the costae compressed, wide, finely antrorsely white ciliate. Spikes many-flowered, broadly ovoid, 7–9 mm long, soft, if pressed then flattened, 6–7 mm wide; bracts ecarinate, ovate to broadly obovate or suborbicular, obcordate, loosely spirally imbricate, thin, pale tan except ferruginous apex, the ample margins very thin, friable; sterile bracts 5–6, 2–2.5 mm long; fertile bracts up to 4.5 mm long; dorsal area broadly to narrowly elliptic, about  $\frac{2}{3}$  as long as the bracts, green. Lateral sepals free, spatulate, acute, ca. 4 mm long, thin, the keel very thin, subentire. Petal blades obovate, ca. 3 mm long, rounded, yellowish. Staminodia bibrachiate, with branches flattened, long-penicillate. Anthers oblong-lanceolate, ca. 1.5 mm long, strongly emarginate and sagittate, longer than the filaments. Capsule obovoid, ca. 2 mm long, placentation central. Seeds numerous, turgidly and broadly asymmetrically ovoid, ca. 0.3 mm long, deep reddish brown, shining, prominently longitudinally 14–16-ribbed.

This soft-based, lax-leaved plant appears to be in the same complex as *X. mima* Smith & Downs and *X. moraesii* Smith & Downs; it is most similar in habit to the latter, differing mainly in the broader leaf blades, slightly narrower spikes, coloration of bract apex, and subentire sepal keels. *Xyris obcordata* is taller than the former and has broader spikes

and entire (vs. ciliate) sepal keels. It is unlike either in its ancipital, broadly bicostate scape and reddish coloration of the thin, friable apex of the obcordate bracts.

**7. *Xyris pranceana* Kral & Wanderley, sp. nov.** TYPE: Brazil. Goiás: Chapada dos Veadeiros, 2 km from Veadeiros, Cerro, common, 18 July 1964, *G. T. Prance & N. T. Silva 58195* (holotype, UB; isotypes, NY, US, VDB). Figure 8.

Planta perennis, densicaespitosa, glabra, basibus bulbosis, castaneis, rhizomate nullo vel brevi horizontali, per bases persistentes veteranas foliorum oblecto. Radices graciles. Folia rigida, 1.5–3 dm longa, erecta, torta et leviter flexuosa, vaginis scaporum longiora; laminae teretes vel subteretes, vaginis 4–5-plo longiores, 0.3–0.5 mm crassae, vade multicostatae, saepe 1–2-sulcatae, ferrugineae vel brunneolae aut olivaceae; apices valde contracti, conice subulati; vaginae nitidae, integrae, ad basin ecarinatae, apicem versus carinatae, ferrugineae vel brunneolae, quam laminis multo magis latiores, valde ligulatae; ligula firma, plana, oblonga, 4–5 mm longa, ad apicem obtusa; margines tenues, integrae, infime gradatim expansae, tum abrupte ad basin dilatatae. Vaginae scaporum tortae, leviter multicostatae, lamproferrugineae, laminis brevibus, subulatis. Scapi vulgo 2.5–4.5 dm longi, recti, leviter torti, teretes, 0.5 mm crassi, inconspicue longitudine striati, olivacei. Spicae ellipsoideae, 8–10 mm longae, attenuatae, pluriflorae, bracteae convexae, ecarinatae, pallide ferrugineae vel brunneolae, nitidae, tenues, integrae, laxe spiraliter imbricatae; bracteae steriles 5–7, ellipticae vel ovatae, infimae ellipticae, fertilibus multo breviores et in eas gradatim transientes; bracteae fertiles ovatae vel late oblongae, ca. 5 mm longae, supernae magis plicatae et infernis tenuiores, ad apicem brevicarinatae; area dorsalis brevilinearis, ferruginea, apicalis. Sepala lateralia libera, valde inaequilatera, lineari-elliptica, curvata, 5–5.5 mm longa, acuta; ala carinali firma, a basi integra, a medio ad apicem ciliata, ad apicem alis et pilis ferrugineis. Laminae petalorum anguste obovatae, ca. 5.5 mm longae, luteolae, acutae, sparse erosae, cuneatae. Staminodia bibrachiate, brachiis longipenicillatis. Antherae lanceolato-oblongae, ca. 1.5 mm longae, sagittatae. Capsula lanceolata, ca. 4 mm longa, subulata; placenta centralis. Semina ovoidea vel ellipsoidea, ca. 0.5 mm longa, atroferruginea, minute sed acute multicostata.

Plants perennial, densely cespitose, smooth, the bases bulbous, castaneous, the rhizome none or short and horizontal, covered by chaffy bases of old leaves. Roots slender. Leaves stiff, 1.5–3 dm long, erect, twisted and somewhat flexuous, longer than the scape sheaths; blades terete or subterete, 4–5 times longer than the sheaths, 0.3–0.5 mm thick, shallowly several-ribbed, often 1–2-sulcate, reddish brown, or brownish, or greenish-brown; apices



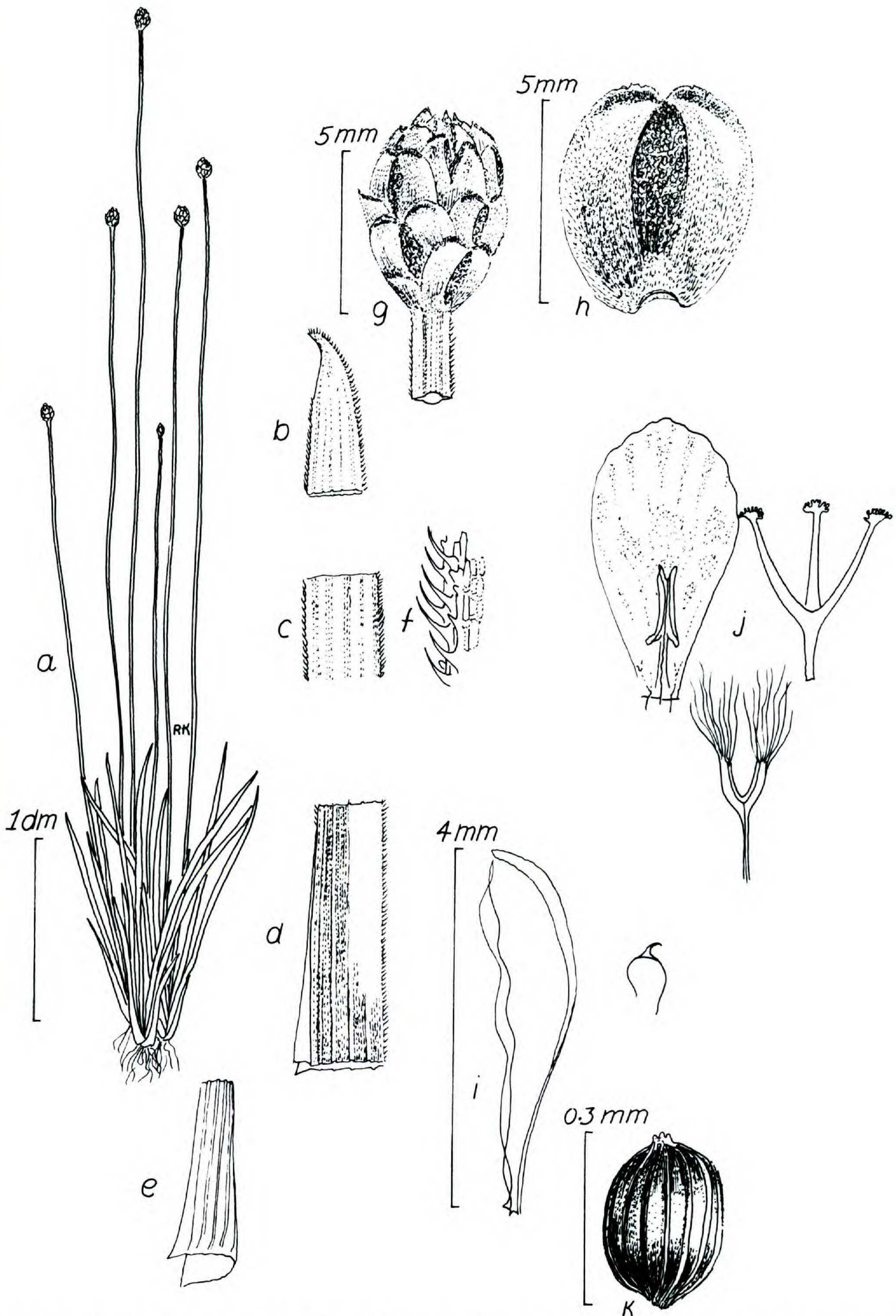


FIGURE 7. *Xyris obcordata* (Irwin et al. 27763).—*a*. Habit sketch.—*b*. Leaf apex.—*c*. Sector of leaf at mid blade.—*d*. Sector of leaf at blade-sheath junction.—*e*. Leaf base.—*f*. Very enlarged small sector of leaf blade edge.—*g*. Spike.—*h*. Fertile bract.—*i*. Lateral sepal.—*j*. Petal blade and stamen, staminode, stylar apex.—*k*. Seed.



strongly narrowed, conic-subulate; sheaths shining, ecarinate at base, carinate toward apex, reddish brown to brown, much wider than the blades, strongly ligulate, the ligule firm, flat, oblong, 4–5 mm long, apically obtuse, the margins thin, entire, gradually expanding downward, then abruptly dilating at base. Scape sheaths twisted, low-multicostate, lustrous reddish brown, with short, subulate blades. Scapes commonly 2.5–4.5 dm long, erect, somewhat twisted, terete, 0.5 mm thick, inconspicuously longitudinally striate, olivaceous. Spikes ellipsoid, 8–10 mm long, attenuate, many-flowered, the bracts convex, ecarinate, pale reddish brown or brownish, shining, thin, entire, loosely spirally imbricate; sterile bracts 5–7, elliptic to ovate, the lowest elliptic, much shorter than the fertile bracts and grading gradually into them; fertile bracts ovate to broadly oblong, ca. 5 mm long, the upper ones more folded and thinner than the lower ones, all short-carinate at apex; dorsal area short-linear, reddish brown, apical. Lateral sepals free, strongly inequilateral, linear-elliptic, curvate, 5–5.5 mm long, acute; keel firm, entire at base, sparsely (deciduously) ciliate from middle to apex, the keel and hairs at the sepal apex reddish brown. Petal blades narrowly obovate, ca. 5.5 mm long, yellow, acute, sparsely erose, the base cuneate. Staminodia bibrachiate, the branches long-penicillate. Anthers oblong-lanceolate, ca. 1.5 mm long, sagittate. Capsule ca. 4 mm long, lanceoloid, the tip subulate; placenta central. Seeds ovoid to ellipsoid, ca. 0.5 mm long, reddish brown, minutely but sharply multicostate.

While the dorsal areas of the bracts of this distinctive species are small, they are dark in contrast to the rest of the bract and are thus evident. The slender, terete leaf blades are much narrower than the dilated, strongly ligulate sheaths. The only hairs on the plant are those found scattered along the keel apex of the lateral sepals.

**8. *Xyris sceptrifera*** Kral & Wanderley, sp. nov. TYPE: Brazil. Goiás: Serra dos Cristais, 17°S, 48°W, creek margin ca.

5 km S. of Cristalina, Goiás, elev. 1,200 m, 3 Mar. 1966, *H. S. Irwin, J. W. Grear, Jr., R. Souza & R. Reis dos Santos 13410* (holotype, UB; isotypes, NY, US). Figure 9.

Planta perennis, caespitosa, basibus bulbosis castaneis; radices graciles. Folia rigida, glabra, solum basalia, valde torta et flexuosa, 5–6 dm longa, erecta vel leviter expansa aut excurvata, vaginis scaporum longiora; laminae subteretes vel angulatae, paucinervosae et sulcatae, 1–2 mm latae, flavovirentes, 3–4-plo vaginis longiores, glabrae; apices erecti, gradatim contracti, aristati, pagina superiore concava; margines (si evidentes) incrassati, glabri; vaginae basin versus rotundatae, longitudine multicostatae, atrocastaneae, nitidae, marginibus integris, in laminam gradatim convergentibus et ad apicem conduplicatis, infime gradatim expansae tum abrupte ad basin dilatatae. Vaginae scaporum laxae conduplicatae vel apertae, leviter carinatae, laminis subteretibus, erectis, acutis. Scapi lineares, recti, vade multicostati, valde torti et flexuosi, ca. 7–10 dm alti, teretes, 1–2 mm crassi, glabri, dilute virides. Spicae ovoideae, ellipsoideae, aut cylindricae, 1–2.5 cm longae, multibracteatae, bracteis spiraliter imbricatis, convexis ecarinatis, oblongis vel obovatis, brunneolis, vadosae erosae vel integris; bracteae infimae paucae, oblongae, fertilibus leviter breviores et in eas transientes; bracteae fertiles 5–5.5 mm longae, convexae rotundatae, apicale late rotundatae vel truncatae, area dorsali anguste elliptica, pallide viridis. Sepala lateralia libera, valde inaequilatera, elliptica, ca. 5.5 mm longa, valde incurvata, leviter exserta; ala carinalis angusta, a basi ad medium integra, a medio retrorse fimbriata, ad apicem expansae vel antrorse dense fimbriata, trichomatibus ferrugineis. Laminae petalorum obovatae, ca. 4 mm longae, ad apicem anguste rotundatae, dentatae, luteolae. Staminodia bibrachiate, brachiis elongatis longipenicillatis. Antherae oblongae, ca. 2 mm longae, profunde sagittatae et retusae, filamentis longiores. Capsula cylindrica, ca. 2.5 mm longa; placenta centralis. Semina anguste oblongo-fusiformia, 1.2–1.3 mm longa, ferruginea, longitudine valde multicostata.

Plants perennial, caespitose, with castaneous bases, bulbous; roots slender. Leaves rigid, smooth, strictly basal, strongly twisted and flexuous, 5–6 dm long, erect or slightly spreading or excurved, longer than the scape sheaths; blades subterete or angulate, few-nerved and sulcate, 1–2 mm wide, yellow-green, 3–4 times longer than the sheaths; apices erect, gradually narrowed, aristate, with upper surface concave; margins (if evident) thickened, smooth; sheaths rounded toward base, longitudinally multicostate, dark castaneous, lustrous, entire-margined, narrowing gradually into the blade, conduplicate at apex, toward base gradually widening then abruptly dilating. Scape sheaths loosely conduplicate



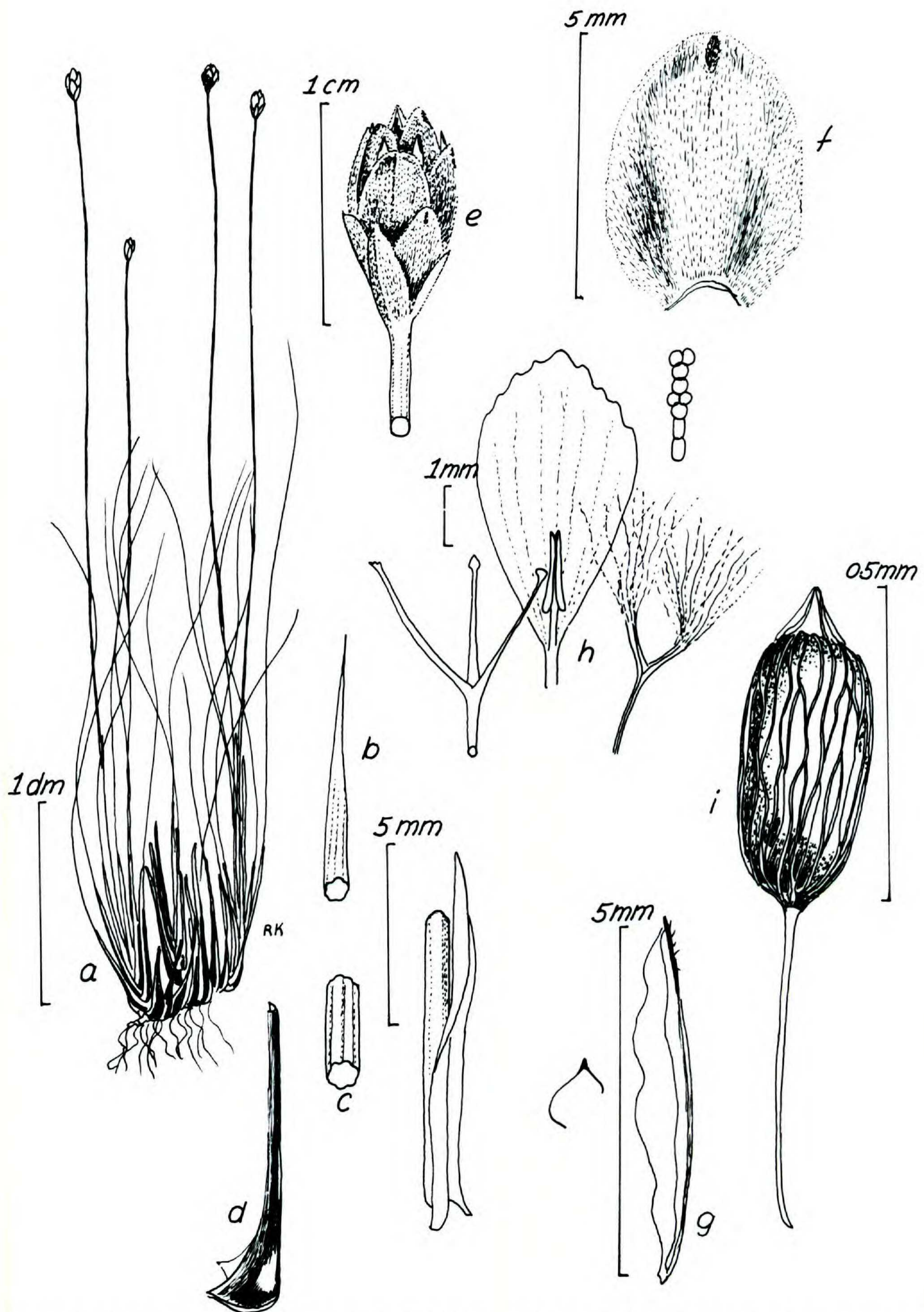


FIGURE 8. *Xyris pranceana* (Prance & Silva 58195).—a. Habit sketch.—b. Leaf apex.—c. Sector of mid blade.—d. Leaf base.—e. Spike.—f. Fertile bract.—g. Lateral sepal.—h. Flower parts.—i. Seed with attached funicle.



or open, slightly carinate, the blades subterete, erect, acute, short. Scapes linear, shallowly multicostate, strongly twisted and flexuous, ca. 7–10 dm high, terete, 1–2 mm thick, smooth, pale green. Spikes ovoid, ellipsoid or cylindrical, 1–2.5 cm long, 5–7 mm thick, with many spirally imbricate bracts, convex-backed, oblong to obovate, brown, shallowly erose or entire; sterile bracts few, oblong, slightly shorter than the fertile bracts and grading into them; fertile bracts 5–5.5 mm long, convexly rounded, broadly rounded to truncate apically, the dorsal area elliptic, pale green. Lateral sepals free, strongly inequilateral, elliptic, ca. 5.5 mm long, strongly curvate; carinal keel narrow, entire from base to middle, retrorsely fimbriate at middle, spreadingly or antrorsely densely fimbriate at apex, the trichomes ferruginous. Petal blades obovate, ca. 4 mm long, yellow, at apex narrowly rounded, toothed. Staminodia bibrachiate, the branches elongate, long-penicillate. Anthers oblong, ca. 2 mm long, deeply sagittate and retuse, longer than the filaments. Capsule cylindrical, ca. 2.5 mm long; placentation central. Seeds narrowly oblong-fusiform, 1.2–1.3 mm long, reddish-brown, longitudinally strongly multiribbed.

*Additional specimens examined.* BRAZIL. GOIÁS: creek bank, ca. 6 mi. S of Cristalina, el. 1,175 m, 5 Nov. 1965, *H. S. Irwin, R. Souza & R. Reis dos Santos* 9947 (NY, US). MINAS GERAIS: Morro das Pedras, wet campo, red clay, ca. 35 km NE of Patrocino, elev. 1,000 m, 29 Jan. 1970, *H. S. Irwin, E. Onishi, S. F. da Fonseca, R. Souza, R. Reis dos Santos & J. Ramos* 25625 (NY, US).

This tall, bulbous-based species with twisted and flexuous leaves and scapes plainly relates to *Xyris goyazensis* Malme, and a full study may later reveal a varietal relationship. However, the fertile bracts, in addition to being more numerous in a larger spike, lack an apical tuft of villous hairs, and the lateral sepals, while fimbriate, have narrower keels which are entire toward the base. The apex of the leaf, unlike that of *X. goyazensis*, is spinulose. *Xyris sceptrifera* differs from the closely related *X. veruina* Malme by having fertile bracts with more obtuse tips, smaller and narrower dorsal areas, and nar-

rower sepal keels which are less copiously fimbriate.

**9. *Xyris seubertii* Nilsson var. *espinhaeae* Kral & Wanderley, var. nov.** TYPE: Brazil. Minas Gerais: Serra do Espinhaço, wet sand, sandstone precipices and adjacent cerrado, ca. 18 km west of Grão Mogol, elev. 950 m, 21 Feb. 1969, *H. S. Irwin, R. Reis dos Santos, R. Souza & S. F. da Fonseca* 23667 (holotype, UB; isotypes, NY, US). Figure 3.

Planta perennis, caespitosa, basibus subbulbosis; caules breves; radices graciles. Folia flabellate expansa, anguste linearia, vulgo 5–7 cm longa, vaginis scaporum plerumque longiora; laminae 1–3-plo vaginis longiores, planae, 0.8–1.2 mm latae, glabrae, valde compressae, olivaceae, longitudine indistincte nervosae; apices gradatim tum abrupte contracti, anguste acuminati, scabri, erecti; margines tenues, antrorse scabrosi; vaginae praeter bases carinatae, carinis glabris, lateribus purpureis vel ferrugineis, glabris, valde multicostatis, basim versus papillosis, marginibus integris, in laminas gradatim convergentibus, infime gradatim expansis, tum abrupte ad basim dilatatis castaneis vel atroferrugineis. Scapi graciles, recti vel aliquantum torti, 2–3 dm alti, subteretes, olivacei, ecostati vel subtiliter 1–3-costati, costis glabris vel subtiliter scabrosis. Spicae pauciflorae, ovoideae vel ellipsoideae aut obovoideae, 5–7 mm longae, bractee convexae, ecarinatae vel carinatae, subdecussatae, pallide brunneolae, marginibus scariosis, latis, integris, rotundatis, ad apicem ferrugineo-fimbriolatis; bractee steriles 4, pari infimo oblongo vel anguste obovato, ca. 3 mm longo, carinato, areis dorsalibus linearibus, breviter excurrentibus, pari intimo latiores, obovato, ca. 3.5 mm longo; bractee fertiles 4, oblongae, ca. 4.5–5 mm longae, rotundatae, plicatae, area dorsalis lanceolata, viridis, 3–4 mm longa. Sepala lateralia  $\frac{1}{3}$ -connata, inaequilatera, curvata, ca. 5 mm longa, lobis oblongis, ala carinali angusta sed forte, a medio ad apicem dense ferrugineo-fimbriolata. Laminae petalorum ellipticae, ca. 5 mm longae, acutae, subintegrae, luteolae. Staminodia bibrachiata, brachiis linearibus compressis apicibus et lateribus longipenicillatis. Antherae lineari-oblongae, ca. 2 mm longae, refusae et sagittatae, filamentis 2-plo longiores. Capsula anguste ellipsoidea, ca. 3.5 mm longa; placenta centralis. Semina matura non visa.

Plants perennial, caespitose, with subbulbous base; stems short, the roots slender. Leaves flabellately spreading, narrowly linear, commonly 5–7 cm long, mostly longer than scape sheaths; blades 1–3 times longer than sheaths, flat, 0.8–1.2 mm wide, smooth, strongly flattened, olivaceous, longitudinally indistinctly nerved; apices gradually, then abruptly, narrowed, narrowly acuminate, scabrous, erect; margins thin, antrorsely scabrid; sheaths except for bases smooth-carinate, the



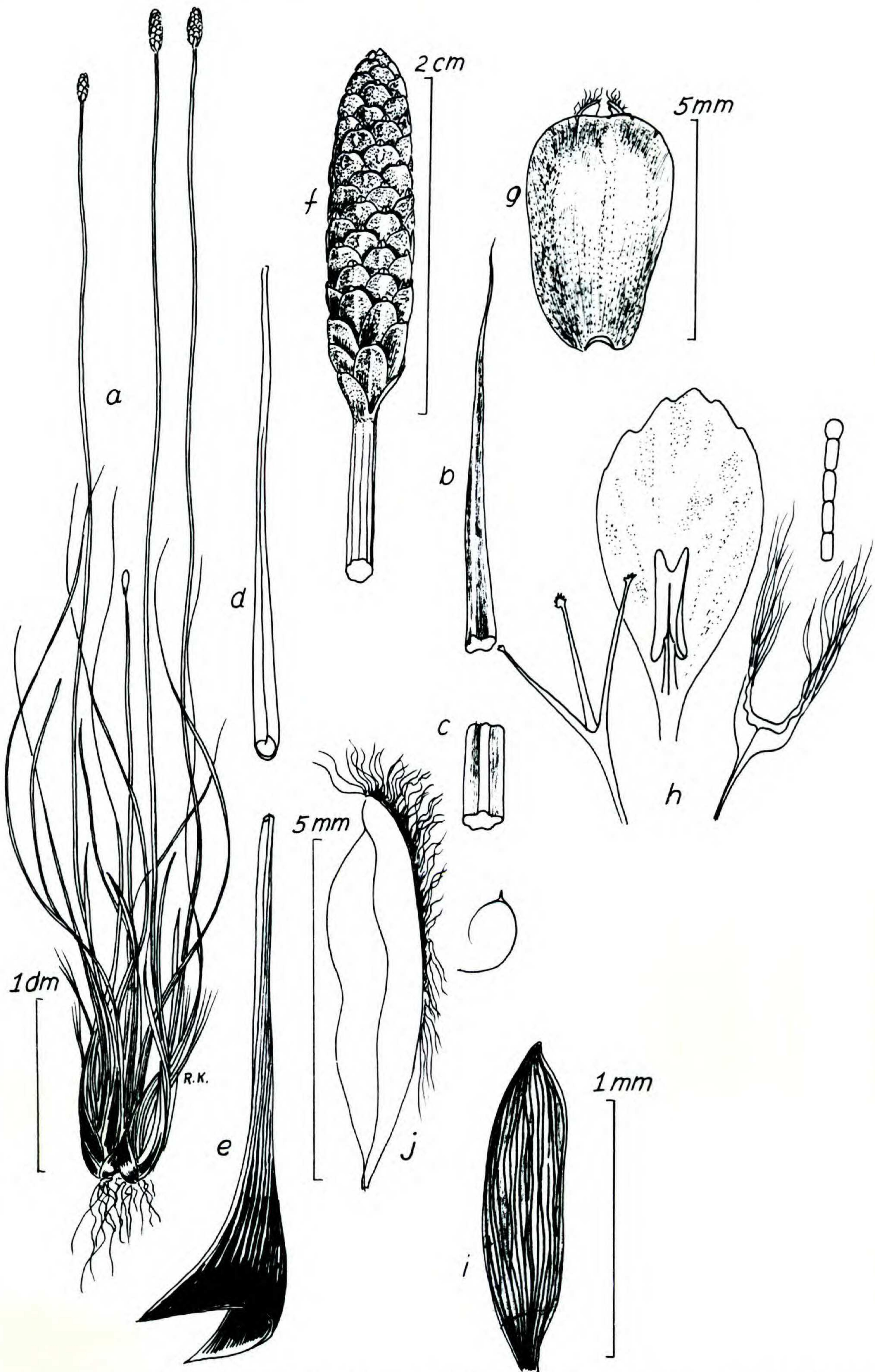


FIGURE 9. *Xyris sceptrifera* (Irwin et al. 13410).—a. Habit sketch.—b. Leaf apex.—c. Sector of leaf at mid blade.—d. Sector of leaf showing sheath and blade junction.—e. Leaf base.—f. Spike.—g. Fertile bract showing exerted lateral sepal tips.—h. Petal, stamen, stylar apex, staminode.—i. Seed.—j. Lateral sepal.



sides purplish or ferruginous, smooth, strongly multicostate, papillose toward base, the margins gradually narrowing into the blades, below gradually widening then dilating abruptly at base, castaneous or deep red-brown. Sheaths of scapes lax, twisted toward base, multicostate, brown, toward apex open, green, with margins broadly scarious, with blades as on foliage leaves but short. Scapes slender, straight or somewhat twisted, 2–3 dm high, subterete, olivaceous, ecostate or finely 1–3-costate, the costae smooth or finely scabrid. Spikes few-flowered, ovoid or ellipsoid or obovoid, 5–7 mm long, the bracts convex, ecarinate or carinate, subdecussate, pale brown, the margins broad, entire, scarious, rusty fimbriolate at apex; sterile bracts 4, the lower pair oblong or narrowly obovate, ca. 3 mm long, carinate, with linear, short-excurrent dorsal areas; inner pair wider, obovate, ca. 3.5 mm long; fertile bracts 4, oblong, ca. 4.5–5 mm long, rounded-plicate, the dorsal area lanceolate, greenish, 3–4 mm long. Lateral sepals ca.  $\frac{1}{3}$  connate, inequilateral, curvate, ca. 5 mm long with lobes oblong, acute, the keel narrow but strong, densely rusty fimbriolate from middle to apex. Petal blades elliptic, ca. 5 mm long, acute, subentire, yellow. Staminodia bibrachiate, the branches linear, flattened, apically and laterally long-penicillate. Anthers linear-oblong, ca. 2 mm long, retuse and sagittate, 2 times as long as filaments. Capsule narrowly ellipsoid, ca. 3.5 mm long, the placentas central. Mature seeds not seen.

The new variety appears to be a small variant of *X. seubertii*, agreeing with that species by having greenish, excurrent dorsal areas and connate lateral sepals with densely rusty-pubescent keels. The bracts are sparsely but definitely villosulous (vs. glabrous) apically; the placentation is definitely free-central rather than basal as in the type variety.

**10. *Xyris villosicarinata*** Kral & Wanderley, sp. nov. TYPE: Brazil. Minas Gerais: wet depression near creek, grazed campo and cerrado, upland valley, Serro

do Itabirito, Minas Gerais, ca. 45 km SE of Belo Horizonte, ca. 1,500 m elev., 8 Feb. 1968, *H. S. Irwin, H. Maxwell & D. C. Wasshausen 19570*. (holotype, UB; isotypes, NY, US). Figure 10.

Planta perennis, caespitosa, basibus leviter bulbosis, fuscis. Caules breves, per bases persistentes veteranas foliorum obtekti. Radices graciles. Folia rigida, erecta, 0.8–1.5 dm longa, solum basalia, vaginis scaporum longiora; laminae vaginis 4–5-plo longiora, tortae, 1–1.3 mm latae, compressae, flavovirentes vel ferrugineofuscae, transverse rugulosae, distincte longitudine 3–4-nervosae; apices anguste acuti, interdum aristulati; aciebus crassiusculi; vaginae ad basim leviter dilatatae, ecarinatae, in laminas gradatim decrescentes, transverse rugulosae, apicem versus carinatae, lateribus fuscis, aciebus pallide longiciliatis. Vaginae scaporum fuscae vel ferrugineae, transverse rugulosae, multicostatae, apicem versus carinatae, laminis brevibus incurvatis. Scapi teretes vel subteretes, plus minus spiraliter torti, flexuosi, 2–3 dm alti, ca. 1 mm crassi, transverse rugulosae, virides, bicostati vel ecostati. Spicae anguste ovoideae vel ellipsoidales, 0.7–1 cm longae, pauciflorae, bracteae convexae, leviter carinatae, costales, pallide lamproferrugineae, integrae vel leviter laceratae, dorsis papillois; bracteae steriles 4, subdecussatae, pari infimo oblongo, ca. 3 mm longo, pari intimo obovato, ca. 5 mm longo; bracteae fertiles obovatae, rotundatae, plicatae, usque ad 7 mm longae, tenues, area dorsali indistincta. Sepala lateralia libera, subaequilateralis, lineari-oblonga, ca. 6 mm longa, obtusa; ala carinali apicem versus irregulariter ciliata vel fimbriolata, lateribus villosulis. Laminae petalorum ellipticae, 6–7 mm longae, acutae, integrae, flavae. Staminodia bibrachiate, brachiis compressis, longipenicillatis. Antherae lanceolatae, ca. 2 mm longae, sagittatae, filamentis longiores. Placenta basalis. Semina non visa.

Plants perennial, caespitose, with bases slightly bulbous, brown. Stems short, covered by bases of old foliage leaves. Roots slender. Leaves rigid, erect, 0.8–1.5 dm long, strictly basal, longer than the scape sheaths; blades 4–5 times longer than sheaths, twisted, 1–1.3 mm wide, flattened, yellow-green to reddish brown, transversely rugulose, distinctly longitudinally 3–4-nerved; apices narrowly acute, sometimes aristulate; edges thickened; sheaths slightly dilated toward base, ecarinate, gradually narrowing above into blades, transversely rugulose, carinate toward apex, the sides brownish, the edges ciliate with long pale hairs. Scape sheaths brownish to reddish brown, transversely rugulose, multicostate, carinate toward apex, with short, incurved blades. Scapes terete or subterete,  $\pm$  spirally twisted, flexuous, 2–3 dm high, ca. 1 mm



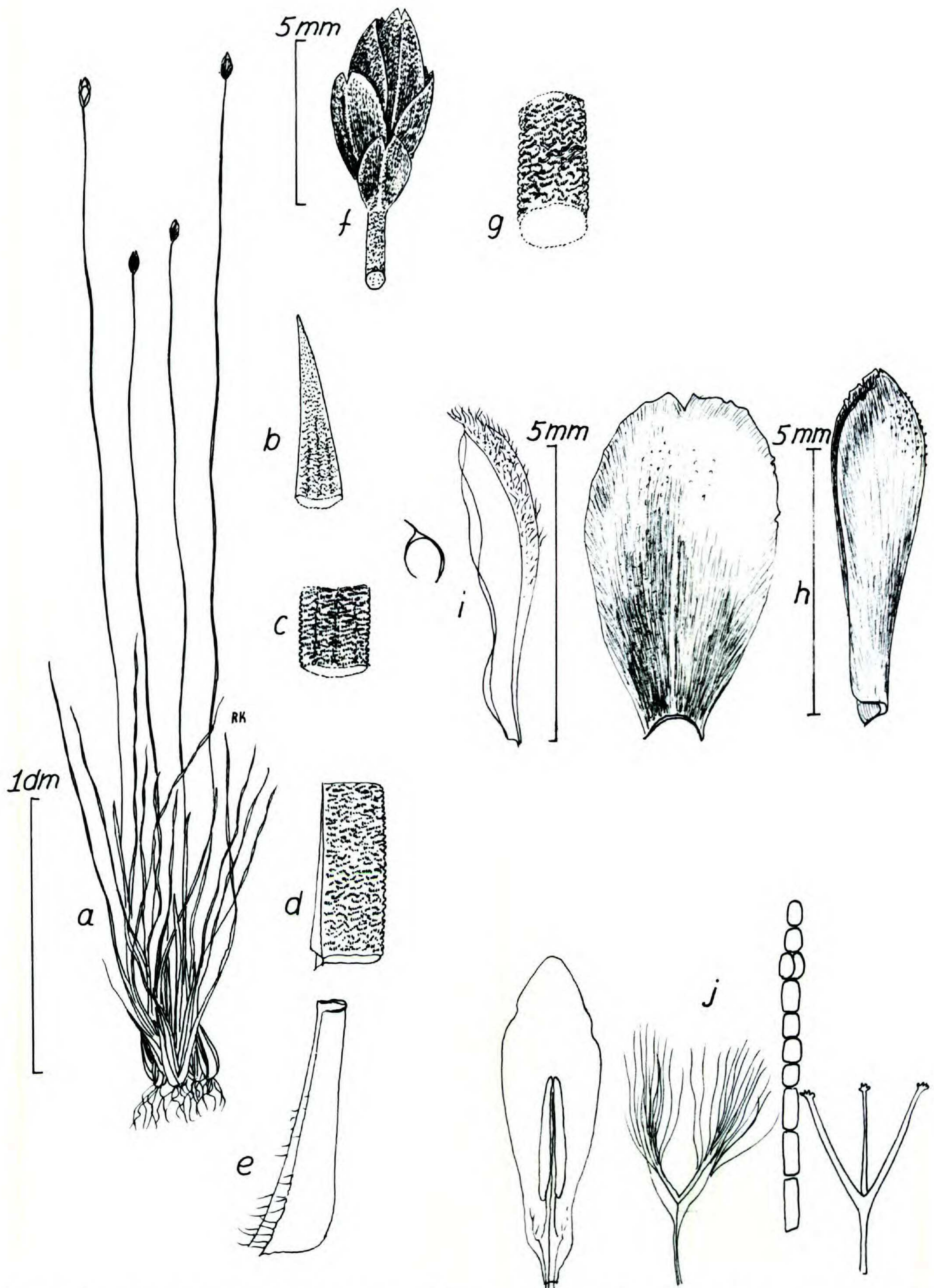


FIGURE 10. *Xyris villosicarinata* (Irwin et al. 19570).—a. Habit sketch.—b. Leaf apex.—c. Sector of mid blade.—d. Sector at leaf blade-sheath junction.—e. Leaf base.—f. Spike.—g. Sector of scape at mid scape.—h. Two views of fertile bract.—i. Lateral sepal.—j. Petal and stamen, staminode, staminodial beard hair, stylar apex.



thick, transversely rugulose, green, bicostate to ecostate. Spikes narrowly ovoid or ellipsoid, 0.7–1 cm long, few-flowered, the bracts convex, slightly carinate, with midrib, pale shining reddish brown, entire or slightly lacerate, the backs papillose; sterile bracts 4, subdecussate, the lowest pair oblong, ca. 3 mm long, the inner pair obovate, ca. 5 mm long; fertile bracts obovate, rounded, plicate, up to 7 mm long, thin, the dorsal area indistinct. Lateral sepals free, subequilateral, linear-oblong, ca. 6 mm long, obtuse; keel irregularly ciliate or fimbriolate toward apex, the sides villosulous. Petal blades elliptic, 6–7 mm long,

acute, entire, yellow. Staminodia bibrachiate, the branches flattened, long-penicillate. Anthers lanceolate, ca. 2 mm long, sagittate, longer than the filaments. Placenta basal. Seeds not seen.

This bears several of the characters of *Xyris tortula* Martius, but the foliage is rugulose throughout (not smooth), the margins of the narrow, twisted leaf blades are not cartilaginous as in *X. tortula*, and the sides of the lateral sepal keel toward its apex are densely villosulous with pale hairs, rather than confined to the keel only as in *X. tortula*.